

EVALUATION REPORT OF LIQUID PIPELINE CONSTRUCTION

Name of Operator:		
H.Q. Address:	Unit Name and Address:	
Co. Official: Phone No.: Fax No.: Emergency Phone No.: Operator ID#:	Phone No.: Fax No.: Emergency Phone No.: Unit Record ID#: Inspection Record ID#:	
Persons Interviewed	Titles	Phone No.
OPS Representative(s): Date(s):		
Company's Construction Maps (copies for Region Files):		
Description of Construction:		
Portion of Construction Unit Inspected:		

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S - Satisfactory U - Unsatisfactory N/A - Not Applicable N/C - Not Checked

PART 195 DESIGN & CONSTRUCTION								
.100	PIPE SPECIFICATIONS				S	U	N/A	N/C
	.112	Pipe Specifications <input type="checkbox"/> New <input type="checkbox"/> Replacement # Manufacturer: # Manufacturing Standard: # Pipe Grade: # Outside Diameter (D): # Wall Thickness (t): # Pipe Wt. - lbs/ft: # Type of Longitudinal Seam: # Specified Min. Yield Strength: # Joint Design - Bevel: # External Coating: # Internal Coating: # Minimum Joint Length: # Footage or Miles:						
.100	DESIGN REQUIREMENTS							
	.104	Check all components for pressure rating.						
	.106	Pipeline design formula: $P = (2St/D) \times F \times E \times T$						
	.108	External design pressure.						
	.110(a)	Outside support for pipe and components.						
	.110(b)	Attachments to pipe design computed and compensated.						
	.112(b)	Pipe manufactured in accordance to API or ASTM.						
	.112(c)	Mark each length of pipe ? 4½ inches OD to indicate SMYS or grade, pipe size, and specification.						
	.114	Used pipe installed in a pipeline system must comply with §195.112(a) and (b) and the following: # Meet an API or ASTM specification. # Free of buckles, cracks, grooves, gouges, dents, corroded areas, or other surface defects that exceed the maximum depth. # Depth of the corroded areas - is the remaining wall thickness equal to or greater than the minimum required by the tolerance in specifications.						
	.116	Valves installed in the pipeline system must comply with the following: (a) Sound engineering design. (b) Compatible with the pipe or fittings to which the valve is attached. (c) Compatible with carbon dioxide or each hazardous liquid the pipeline may carry. (d) Both hydrostatically shell and seat tested without leakage. (e) Equipped with a means for clearly indicating open or closed. (f) Marked on the body or nameplate with the following: (1) Manufacturer's name or trademark. (2) Class designation or maximum working pressure. (3) Body material. (4) Nominal size.						

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.100	DESIGN REQUIREMENTS (Cont.)		S	U	N/A	N/C
	.118(a)	Marking, end preparation, and bursting requirements of ANSI B16.9 or MSS SP-75 .				
	.118(b)	Fittings free of any buckles, dents, cracks, gouges, or other defects that might reduce				
	.118(c)	Butt welded fittings rated at or above same pressure and temperature of the pipe.				
	.120	New and replaced line pipe, valve, fitting, or other line component designed and constructed to accommodate the passage of instrumented internal inspection devices.				
.200	CONSTRUCTION SPECIFICATION					
	.202	Comprehensive written construction specifications.				
	.204	Qualified inspector performing inspections.				
	.280	Supports and braces not welded to the pipe.				
	.210(a)	Pipeline ROW selected to avoid areas containing private dwellings, industrial buildings, and places of public assembly.				
	.210(b)	Pipeline located within 50 feet of any private dwelling, industrial building, or place of public assembly provide with at least an additional 12 inches of cover .				
	212(b)	Field bends made in compliance: (1) Not impair serviceability. (2) Smooth, free from buckles, cracks, or mechanical damage. (3) Longitudinal weld near neutral axis unless - an internal bending mandrel is used; or pipe is ≥ 12 inches or D/t ratio is less than 70% .				
.200	WELDING PROCEDURES					
	.214(a)	Welding performed by a qualified welder in accordance with welding procedures qualified to produce welds.				
	.224	Welding operations protected from weather conditions.				
	.226(a)	Arc burns repaired.				
	.226(b)	Repair arc burns by completely removing the notch by grinding, remaining wall thickness equal to specification of pipe. If not repairable by grinding, a cylinder cut out.				
	.226(c)	Ground not welded to pipe.				

SECTION 6 - ACCEPTANCE STANDARDS FOR NONDESTRUCTIVE TESTING

Discontinuity		Individual	Cumulative
Type	Abbrev.	Length	in 12 inches
Inadequate Penetration - weld root	IP	1"	1"
Inadequate Penetration - due to high/low	IPD	2"	3"
Incomplete Fusion - root or top of joint	IF	1"	1"
Incomplete Fusion - due to cold lap	IFD	2"	2"
Burn Through	BT	¼"	½"
Elongated Slag Inclusions - wagon tracks	ESIs	1/16" - Width	2'
		2" - Length	
Isolated Slag Inclusions	ISIs	½" - Width	4 or less
		½" - Length	½" - Wide
Porosity - individual or scattered (spherical)	P	½"	25 % of t
Porosity - cluster	CP	½" - Diameter	½" - Length
		1/16" - Individual	
Porosity - wormhole		½"	25% of t
Porosity - hollow bead	HB	½"	2"
Cracks	C	5/32" or less	5/32" or less
Internal Undercutting	IU	2" - Length	2'
External Undercutting	EU	2" - Length	2"

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.200	WELDING PROCEDURES (Cont.)		S	U	N/A	N/C
	.228	Inspectors performing visual inspections supplemented by nondestructive testing, acceptability of welds per Section 6, API 1104 , except for Subsection 6.9 .				
	.230(a)	Remove or repair cracks ? 8% , remove cracks longer than 8% .				
	.230(b)	Welds repaired, remove defect down to clean metal, preheat pipe, and assure acceptability.				
	.230(c)	Repairs done in accordance with qualified written welding procedures, and mechanical properties of the repaired weld equal to those specified for the original weld.				
.200	NONDESTRUCTIVE TESTING OF WELDS					
	.234(a)	Clearly indicate any defects that may affect the integrity of the weld by nondestructive testing.				
	.234(b)	Detailed written procedure established and qualified for nondestructive testing. (1) Written set of procedures. (2) Radiographer trained and qualified. (Level II or better)				
	.234(c)	Procedures established for proper interpretation.				
	.234(d)	Nondestructively test 10% of each welders welds per day.				
	.234(e)	Test 100% or 90% if impractical. (1) Stream, river, lake, reservoir, or other body of water. (2) Within railroad or public road ROW's. (3) Overhead road crossings and within tunnels. (4) Within the limits of any incorporated subdivision. (5) Within populated areas such as residential subdivisions.				
	.234(f)	100% of all girth welds nondestructively tested on used pipe.				
	.234(g)	Test 100% of girth welds at tie-ins.				
.200	EXTERNAL CORROSION					
	.236	Protection against external corrosion for each component.				
.200	EXTERNAL COATING					
	.238(a)	Effective coating of components.				
	.238(b)	Repair coating before lowering pipe.				
.200	CATHODIC PROTECTION					
	.242(a)	Adequate cathodic protection of the system.				
	.242(b)	Cathodic protection system installed 1 year .				
	.244	Sufficient number of test leads properly installed.				
.200	INSTALLATION OF PIPE					
	.246(a)	Pipe installed to minimize stresses and protect the pipe coating from damage.				
	.248(a)	Installed below the level of cultivation. (refer to table below)				

Location	Cover (inches)	
	For Normal Excavation	For Rock Excavation
Industrial, commercial, and residential areas	36	30
Crossings of inland bodies of water with a width of at least 100 ft from high water mark to high water mark	48	18
Drainage ditches at public roads and railroads	36	36
Deepwater port safety zone	48	24
Gulf of Mexico and its inlets and other offshore areas under water less than 12 ft deep as measured from the mean low tide.	36	18
Any other area	30	18

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.200	INSTALLATION OF PIPE (Cont.)			S	U	N/A	N/C
	.248(b)	If minimum cover prescribed above cannot be attained because it is impracticable to do otherwise additional protection being provided as required?					
	.250	12 inches of clearance between the pipeline and any other underground structure.					
	.252	Backfilling performed in a manner that provides firm support for the pipe and does no damage to the coating					
	.256	Pipe at each railroad or highway crossing installed so as to adequately withstand the dynamic forces exerted by anticipated traffic loads.					
.200	VALVES: GENERAL						
	.258(a)	Install valve in a location, accessible to authorized employees and protected from damage or tampering.					
	.258(b)	Each submerged valve located offshore or in inland navigable waters marked, or located by conventional survey techniques, to facilitate quick location when operation of the valve is required.					
.200	VALVES: LOCATION						
	.260	Are valves being installed at each of the following locations:					
		(a) On the suction end and discharge end of a pump station in a manner that permits isolation of the pump station equipment in the event of an emergency.					
		(b) On each line entering or leaving a breakout storage tank area in a manner that permits isolation of the tank area from other facilities.					
		(c) On each mainline at locations along the pipeline system that minimizes damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain in open country, for offshore areas, or for populated areas.					
		(d) On each lateral takeoff from a trunk line in a manner that permits shutting off the lateral without interrupting the flow in the trunk line.					
		(e) On each side of a water crossing that is more than 100 feet wide from high-water mark to high-water mark unless a waiver has been granted for a particular case where valves not are justified.					
		(f) On each side of a reservoir holding water for human consumption.					
.200	CONSTRUCTION RECORDS						
	.266	Are there complete records showing the following:					
		(a) Number of girth welds and number of nondestructively tested welds, including number and disposition of each rejected weld.					
		(b) The amount, location, and cover of each size of pipe installed.					
		(c) The location of each crossing of another pipeline.					
		(d) The location of each buried utility crossing.					
		(e) The location of each overhead crossing.					
		(f) The location of each valve and corrosion test station.					
.300	PRESSURE TESTING						
	.302(a)	Has the pipeline been hydrostatically tested or is a hydrostatic test planned?					
	.302(c)	If the pipeline was hydrostatically tested:					
		1. Was the entire buried portion tested without leakage for 8 hours ?					
		2. Was the above ground portion tested for at least 4 hours ?					
	.304	Does the operator hydrostatically test all pipe and attached fittings, including components, unless - if a component is the only item being replaced aor added and the manufacturer certifies that it was hydrostatically tested at the factory or it was manufactured under a quality control system that ensures that the component is at least equal inn strength to a prototype that was hydrostatically tested at the factory?					

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.300	PRESSURE TESTING (Cont.)		S	U	N/A	N/C
	.306	Was the pipeline tested with water?				
	.380	Was pipe associated with tie-ins either pretested or hydrostatically tested in place?				
	.310(a)	Are hydrostatic test records retained for the life of the facility tested?				
	.310(b)	Do the hydrostatic test records include the following:				
		(1) The pressure recording charts.				
		(2) The test instrument calibration data				
		(3) The operator's name, the name of the person responsible for making the test, and the name of the test company used, if any.				
		(4) The date and time of the test.				
		(5) The minimum test pressure.				
		(6) The test medium.				
		(7) A description of the facility tested and the test apparatus.				
		(8) An explanation of any pressure discontinuities, including test failures, that appear on the pressure recording charts.				
		(9) Where elevation differences in the test section exceed 100 feet , a profile of the pipeline showing the elevation and test sites over the entire length of the test section.				